

REPORT OF THE TWENTY-EIGHTH ANNUAL MEETING OF THE OHIO ACADEMY OF SCIENCE.

The Twenty-eighth Annual Meeting of the Ohio Academy of Science was held at Ohio State University, Columbus, Ohio, May 30 to June 1, 1918, under the presidency of Professor Francis L. Landacre. Forty-seven members were registered as in attendance; ten new members were elected.

After adjournment of the formal sessions, the botanists and zoologists went on an automobile excursion to the picturesque and ecologically interesting Sugar Grove region, and the geologists took a longer trip for the study of the rock series (Niagara to Carboniferous) and topography between Hillsboro and the Scioto River.

GENERAL PROGRAM

THURSDAY, MAY 30.

10:30 A. M.—Business Meeting.

12:30 P. M.—Luncheon.

2:00 P. M.—Reading of Papers, General Session.

4:00 P. M.—Demonstrations.

6:00 P. M.—Dinner, followed by Address of the President, Professor Francis L. Landacre, Ohio State University, "The Origin of the Cerebral Ganglia of the Vertebrates."

FRIDAY, MAY 31.

9:00 A. M.—Reading of Papers, Sectional Session.

12:30 P. M.—Luncheon.

2:00 P. M.—Adjourned Business Meeting.

3:00 P. M.—Reading of Papers, Sectional Session.

6:00 P. M.—Supper.

7:30 P. M.—Symposium: "Science and the War"—

"The Work of the Ground Schools in the Training of the Air Forces of the United States," Professor F. C. Blake.

"Modern Methods of Plant Disease Control," Professor W. G. Stover.

"Psychological Tests in the Army," Captain George F. Arps.

"Methods of Teaching the Theory of Flight in Schools of Aeronautics," Professor H. C. Lord.

"Topography and the War on the Western Front," Professor T. M. Hills.

"The Newer Demands on Physics and Physics Teachers Due to the War," Professor E. H. Johnson.

SATURDAY, JUNE 1.

Excursions.

MINUTES OF BUSINESS MEETINGS

The first business session was called to order by President Landacre at 10:30 A. M., on Thursday, May 30. An adjourned session was held at 2:00 P. M. on the following day.

The appointment of the following committees for the meeting was announced by the chair:

Committee on Membership—R. C. Osburn, F. C. Blake, R. J. Seymour.

Committee on Resolutions—M. M. Metcalf.

Committee on Necrology—A. M. Bleile.

The following Auditing Committee was elected by the Academy: F. C. Blake, E. N. Transeau.

The following Nominating Committee was elected by the ballot of the Academy: T. C. Mendenhall, L. G. Westgate, F. L. Landacre.

Report of the Secretary

The following report by the Secretary was received and ordered filed:

DELAWARE, OHIO, May 29, 1918.

To the Ohio Academy of Science:

The work of the Secretary has consisted largely in the usual routine correspondence and in the carrying out of the directions of the Executive Committee, as noted in the report of that committee.

The report of the Twenty-seventh Annual Meeting was prepared rather unusually promptly and forwarded to *Science*. Its fate is shown by the following quotation from a letter by Professor Cattell, Editor of *Science*, under date of August 30:

"Owing to a necessary reduction in the size of the journal, it has been very much overcrowded this year and it has seemed impossible to find space for the report. I hope that the reduction in the size of *Science* is only temporary and that you will be so kind as to send me the report of next year's meeting."

The report will be prepared in case its publication is assured.

Notices of the Twenty-eighth Annual Meeting have been sent to the leading Columbus dailies with a request for publicity; but it has seemed hardly worth while to send such notices to Cleveland, Cincinnati and Toledo papers, as in the past. If the Academy so desires, notices will next year be sent to the larger list of papers.

A number of officers and committee members have this year been prevented from carrying out their work for the Academy. Professor Lamb has been compelled by ill health to give up the Vice-presidency for Geology, and Professor Westgate has been acting in his place. Professor Carney's new duties have taken him away from the State so much of the time that it has been impossible for him to serve with either the Executive Committee or the Committee on Codification of the Constitution. The Secretary has also received word from Professor Waite of his appointment as Captain in the Surgeon General's office and his inability to take any active part in the work of the Editorial Board of the *Ohio Journal of Science*. And at the last moment a letter from Professor Samuel R. Williams announces that he will be prevented from attending the meeting because of serious illness in his household; Professor Moore will be present to serve in his stead.

The members of the Academy may be interested in two rather conspicuous, but perhaps unconscious, changes in policy regarding the meeting place. During the decade, 1891-1900, all but two meetings were held in Columbus; during the next decade only three meetings were held in Columbus; since 1900 seven of the eight meetings (including the present session) have been held in Columbus. Since 1913 no invitation has been received except the cordial and generous standing invitation from the State University. There can hardly be a question that Columbus is the most generally convenient and desirable place for the meetings of the Academy. On the other hand, it may be worth careful consideration whether an occasional meeting in some other city does not aid in stimulating interest in the Academy throughout the State.

Finally the Secretary wishes to raise another question of policy. Is it not time for the Academy to establish a permanent headquarters in Columbus, to which all Academy mail may go, and from which all Academy business may be transacted? If the time is not ripe for this action, the Secretary would recommend, at least, that the new secretary be elected from Columbus, to facilitate closer co-operation with the Treasurer and with Mr. Reeder of the Library. Partly for this reason, and partly for personal reasons, the present secretary would request the Nominating Committee to omit his name from the list of nominations to be presented at the second business session of this meeting.

Respectfully submitted,

EDWARD L. RICE, *Secretary*.

The recommendations of the Secretary relative to place of meeting and establishment of a permanent Academy headquarters were referred to a special committee for consideration and report to the Academy. The committee reported as follows:

1. With reference to the place of meeting, the committee is of the opinion that the present practice of the Academy, of meeting as a general thing in Columbus, but leaving the way open to meet at other places in the State when occasion offers, should be continued.

2. With reference to the establishment of a permanent headquarters for the Academy at Columbus, from which all Academy business may be transacted, the committee has no recommendation to offer.

Respectfully submitted,

STEPHEN R. WILLIAMS,
L. G. WESTGATE,
C. G. SHATZER.

Report of the Treasurer for the Year 1917-18

The report of the Treasurer was received as follows, and referred to the Auditing Committee, whose report is appended.

For the year since our last annual meeting, the receipts including balance from last year, have amounted to \$474.20, and the expenditures to \$272.85, leaving a cash balance of \$201.35.

RECEIPTS

Balance from last year.....	\$139.10
For sale of publications.....	32.10
Membership dues.....	303.00

\$474.20

EXPENSES

Miscellaneous expenses.....	\$ 70.85
202 subscriptions to the Ohio Journal of Science.....	202.00
Balance, May 30, 1918.....	201.35

\$474.20

Respectfully submitted,

JAS. S. HINE, *Treasurer*.

May 30, 1918.

The Auditing Committee has verified the receipts and expenditures of the Treasurer of the Academy, Professor J. S. Hine, and finds that they are correct.

E. N. TRANSEAU,
F. C. BLAKE.

Report of the Executive Committee

The report of the Executive Committee was received as follows and ordered filed.

DELAWARE, OHIO, May 27, 1918.

To the Ohio Academy of Science:

A single meeting of the Executive Committee has been held since the last Annual Meeting—on December 8, 1917. Professors Landacre, Hine, Shatzer and Rice were in attendance. Following the custom of the last few years, all officers and chairmen of standing committees were invited to meet with the Executive Committee, Vice-Presidents Detmers and Seymour responded to this invitation.

The place and date of the Annual Meeting were determined; and the Program Committee was requested to arrange, if possible, for field trips on Saturday, June 1, and to give an increased prominence to the item of demonstrations in the program for the meeting. Both suggestions have borne fruit. It is now left for the Academy to prove the fruit in the eating.

There was some discussion of the propriety of the Academy paying the travelling expenses of the members of the Executive Committee in attending meetings and the clerical, printing and postage bills incurred by members of the Program Committee in arranging the program. The Executive Committee was not ready to make any formal recommendation in this matter.

The Secretary was authorized to have a set of the Annual Reports of the Academy bound for the use of present and future secretaries. (Steps have been taken by the Secretary, in conference with Mr. Reeder, to carry out this action.)

The Secretary was instructed to take up with Mr. Reeder the matter of exchanges with the Marine Biological Laboratory, Woods Hole, Mass., and to secure, if practicable, the placing of a complete set of the Proceedings in the Library of the Laboratory. (Consultation with Mr. Reeder showed that the Academy had expressed its willingness to supply the Laboratory with lacking numbers of the Academy publications, but that no reply had been received).

The Secretary was also instructed to renew correspondence looking toward the establishment of a Section for Psychology in the Academy. (A questionnaire concerning the desirability of this section was mailed to a number of the leading psychologists of the State; the consensus of opinion was strongly in favor of the establishment of the section, but equally strongly against attempting this action at this time, when the psychologists are so generally in national service).

In view of the action of the last Annual Meeting, looking toward amendment, the Executive Committee has postponed the re-printing of the Constitution and By-Laws ordered by the Academy.

The question was raised by several members of the Academy whether war conditions made it desirable to omit this year's Annual Meeting. This question was carefully considered by the Executive Committee by correspondence. The practically unanimous decision was that the demand of patriotism was for holding the meeting rather than for omitting it, even if the attendance might be materially decreased.

An invitation was received by the Ohio Academy to send a delegate to the Semi-Centennial Anniversary of the Kansas Academy of Science, celebrated on March 15 and 16. After consultation by mail, the Executive Committee directed the Secretary to communicate our congratulations to the Kansas Academy and to request Professor G. E. Coghill, of the University of Kansas, a member of the Ohio Academy from 1907 to 1915, to act as our representative. (This was done by night letters, under date of March 13).

Respectfully submitted,

EDWARD L. RICE,

Secretary for the Committee.

Report of the Publication Committee

No report of the Publication Committee was presented.

Report of the Trustees of the Emerson McMillin Research Fund.

The following report of the Trustees of the Research Fund was received and referred to the Auditing Committee, whose report is appended.

May 30, 1918.

RECEIPTS

Balance April 1, 1917.....	\$778.64	
March 15, 1918, from Mr. McMillin.....	250.00	
		<hr/> \$1,028.64

EXPENDITURES.

For Research:

Geo. D. Hubbard.....	\$ 22.32	
E. L. Rice.....	55.40	
L. B. Walton.....	37.40	
		<hr/> 115.12

Balance in Bank.....	\$ 913.52
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GRANTS.

L. B. Walton.....	\$ 75.00	
E. N. Transeau.....	75.00	
E. L. Rice.....	55.40	
H. W. Lutz.....	25.00	
		<hr/> \$ 230.40
Paid on above grants.....	92.80	
Liability on grants.....		<hr/> \$ 137.60
Net assets.....		<hr/> \$ 775.92

HERBERT OSBORN,
T. C. MENDENHALL.

May 30, 1918, audited and found correct.

E. N. TRANSEAU,
T. C. BLAKE,
Auditing Committee.

In addition to the financial report for the year, the Trustees presented the following announcement concerning the use of the McMillin Research Fund, which was approved by the Academy.

The McMillin Research Fund of the Ohio Academy of Science has been maintained through the generosity of Emerson McMillin and grants from this fund are made upon application to the Trustees of the fund.

Applications for grants should include a statement of the subject to be investigated, the nature of the expenses to be covered and in so far as practicable a list of the proposed items of expense in such manner that the Trustees may determine the expenses and the allowance needed.

In rendering accounts it is desirable that an itemized statement be submitted, showing the cost of apparatus or supplies used, or, in case of traveling expenses, the localities visited, amounts of railroad fare, hotel and other expenses as incurred. Payments granted from this fund will, as a rule, be made only after the expenses have been incurred and upon receipt of detailed statement. Original vouchers should be furnished when possible.

Apparatus, books, maps or material supplies not consumed during the investigation, which may be secured with grants from this fund are to be the property of the Academy and after the investigation is completed should be accounted for to the Trustees or deposited with such officer of the Academy as the Trustees may direct.

It is expected that the results of such investigations will be published and if other means of publication are not available, the Trustees will try to assist in securing suitable publication.

T. C. MENDENHALL, *Chairman.*

The Trustees further reported to the Academy a proposal to invest five hundred dollars of the Research Fund in Liberty Bonds, subject to the approval of Mr. McMillin. The Academy voted its hearty endorsement of this proposal.

Report of the Library Committee

For the Library Committee, Mr. Reeder, of the Ohio State University Library, presented the following report, which was received and ordered filed.

May 30, 1918.

To the Ohio Academy of Science:

At the last meeting of the Academy, it was voted to turn over to the University Library for incorporation in its collection, the materials received through exchanges by the Academy. In accordance with this action, the work of the year has been the unifying of these files. A

sheet record has been made of the collections of the Academy as they stood at the time of transfer. As opportunity presented, the University Library has taken these sets and checked them. If needed in the Library, these sets, or individual items, have been added; if not needed, the material has been added to the duplicate collections for exchange purposes. In case any binding has been done, the volumes have been marked with the special book-plate which the Academy authorized at its last meeting. If it had not been for the absence of the Librarian on war work, this process of incorporation would have been completed by this date, but a portion of it will have to go over into this coming year.

In connection with the general policy of increasing exchanges, the University Library has been able to add new names to the list of the Academy. The combination of the *Ohio Journal of Science*, the *Bulletins of the Ohio Biological Survey* and the *Proceedings of the Ohio Academy of Science* makes a series of sets that command attention and of sufficient value to give a good basis for arranging terms of exchange. During the year several libraries and societies have completed their sets of the *Special Papers* and *Annual Reports* of the Academy on an exchange basis.

The only publication issued by the Academy during the year was the *Annual Report of the Twenty-seventh Meeting*, April 6 and 7, 1917. This report was mailed to the membership list as printed in that report and to all exchanges on the list.

The sale of publications during the year amounted to \$24.35. This sum has been turned over to the Treasurer.

In accordance with the recommendation of the Executive Committee, a complete set of *Annual Reports* Nos. 1-25, have been bound for use of the Secretary.

At the last meeting of the Academy the Committee on Catalog of Scientific Journals was discharged and the work turned over to the Library Committee. This proposition stands today about in the same situation as at the time of the last report, with two exceptions: (1) Oberlin College has added about 3,000 cards to the Catalog during the year; and (2) the Catalog itself has been placed in order and now occupies ten (10) trays in the catalog in the University Library.

C. W. REEDER.

Report of the Committee on Legislation

The following report of the Committee on Legislation, presented by the chairman, Dr. Mendenhall, was received and ordered filed.

In presenting what may be considered as a preliminary report or what may be considered as a report of progress your committee regrets to say that circumstances have made it impracticable to meet for thorough discussion of the questions that might arise and that therefore the suggestions offered must be considered as tentative and that suggestions or instructions along any of the lines mentioned will be

welcomed. Since there is not likely to be another meeting of the Academy before the next Assembly meets, some direction or indication of the wishes of the Academy will be of special value.

There has been no session of the Assembly since our last meeting and therefore no presentation of our wishes has been possible.

It appears to the committee that desired legislation may be sought along two lines; first, to provide funds for the Academy to undertake definite researches along special lines and to provide a fund for the publication of the proceedings of the society; second, to secure such legislation as may connect the Academy in an advisory capacity with the State in regard to matters of scientific importance requiring technical scientific information, and which the membership of the Academy is qualified to give.

For the first purpose it seems that the most probable fund might be one providing for publication either directly by state printing, with perhaps, a limitation of say 500 pages per year or a direct appropriation, to be expended by the Society for publication purposes. Such a request might be the first to urge, and then a request for the appropriation of a research fund, to be expended under the direction of the Trustees of the Research Fund of the Academy in such an amount as might be deemed essential for the investigations proposed.

For the second general purpose, there would seem to be necessary an act creating an advisory committee within the Academy, with power to form sub-committees for specific problems, especially with reference to needed legislation along lines within the scope of the Academy. Such, for example, as legislation concerning conservation and utilization of natural resources of the state, the protection of forests, the development of fisheries, game and other natural resources, the best development and utilization of which are matters of scientific knowledge and which are in considerable degree now the subject of controversy by special interests, rather than the objects of care by intelligent agencies interested in their widest service and perpetuation.

Unless it is possible to have a careful discussion of these questions and to give certain fairly definite instructions, it would seem necessary in order to make any progress within the next year that the committee, or a new committee formed for the purpose, be given considerable discretion in the matter of character and extent of the legislation sought. While there is perhaps less hope at present on account of the urgency of other matters, it would seem that the importance of these measures for the Academy merit as prompt action as possible and it will be well certainly to have our needs formulated in such definite shape that we may be prepared to act as promptly as circumstances will permit.

T. C. MENDENHALL, *Chairman*,
HERBERT OSBORN.

Owing to the request of Dr. Mendenhall to be excused from the chairmanship of the committee and to Prof. Waite's temporary absence on war work, it was voted that the present

committee be discharged and that a new committee of five be appointed. The President appointed the following: Herbert Osborn, Chairman; T. C. Mendenhall, M. M. Metcalf, E. L. Rice, L. B. Walton.

Report of the Committee on Codification of the Constitution

The following report of the Committee on Codification of the Constitution, presented by Prof. Blake, was discussed at some length in both business sessions and finally laid upon the table by vote of the Academy.

May 30, 1918.

To the Ohio Academy of Science:

Two matters were referred to this committee—the codification of the Constitution and By-Laws and the question of lengthening the term of office of the President and Secretary. The term of office of the Treasurer was not specifically mentioned, but should be logically included with the others.

One member of the committee, Professor Carney, has been out of the State so much of the time that he has been practically unavailable; the remaining members, neither of whom was able to attend the last annual meeting, are somewhat in doubt concerning the intention of the Academy as to “codification,” and are in decided disagreement concerning the question of the term of office.

Interpreting “codification” in the narrow sense, and not as the equivalent of general revision, the committee begs to report that the Secretary has a record of all amendments which have been passed, and that the preparation of the Constitution and By-Laws for the press will be a simple clerical matter when the Executive Committee is ready to proceed with the printing.

Considering the term of office of President, Secretary and Treasurer, the committee, while unable to present a definite recommendation, offers the following suggestions:

1. *Term of Office of President.*—One member of the committee favors the lengthening of the term to three years, for the following reasons: The Ohio Academy bears the same relation to the State Government that the National Academy of Science does to the Federal Government. For the period of the war and especially for the reconstruction period after the war it would seem that longer terms of office than at present would give the opportunity for some real constructive work of immense and permanent value. The other member feels that it is wiser to retain the present one year term, particularly in view of the fact that the President is expected to present the annual address. The change to the longer term would necessitate the preparation of three consecutive addresses by the same man would leave the Academy without a presidential address in two out of every three years. A third alternative would be the abolition of the address—a result equally objectionable with the others.

2. *Term of Office of Secretary.*—It is agreed by the committee that the office of the secretary should be somewhat permanent; and one member of the committee would secure this result through lengthening the term to five years. In favor of this view, he further suggests that the office of secretary should be the most permanent of any of the offices. If the presidency had a three year period and the secretaryship a five year period, it would seldom occur that both incumbents would complete their terms simultaneously. The important thing of the whole matter is continuity of constructive policy. The other member of the committee, (owing to the constitution of the committee, it is fair to Professor Blake to add that this member is the present secretary), believes that the desired permanency can be secured by indefinite re-election, while the Academy may more easily and more speedily eliminate an undesirable official.

3. *Term of Office of Treasurer.*—The arguments pro and con are essentially as in the case of the secretaryship.

Respectfully submitted,

EDWARD L. RICE,
FREDERICK C. BLAKE,
Committee.

Election of Officers

From the double slate of nominations prepared by the Nominating Committee, the following officers for 1918-19 were elected by the ballot of the Academy.

President—Professor M. M. METCALF, Oberlin College, Oberlin.

Vice-President for Zoology—Professor R. A. BUDINGTON, Oberlin College, Oberlin.

Vice-President for Botany—Professor C. E. O'NEAL, Ohio Wesleyan University, Delaware.

Vice-President for Geology—Professor G. F. LAMB, Mt. Union College, Alliance.

Vice-President for Physics—Professor SAMUEL R. WILLIAMS, Oberlin College, Oberlin. (On resignation of Prof. Williams, owing to absence from the State on leave, the Executive Committee appointed Professor S. J. M. ALLEN, University of Cincinnati, to fill vacancy).

Vice-President for Medical Sciences—Professor ERNEST SCOTT, Ohio State University, Columbus.

Secretary—Professor E. L. RICE, Ohio Wesleyan University, Delaware.

Treasurer—Professor J. S. HINE, Ohio State University, Columbus.

Elective Members of Executive Committee—Professor R. C. OSBURN, Ohio State University, Columbus; Professor L. B. WALTON, Kenyon College, Gambier.

Member of Publication Committee—Professor L. G. WESTGATE, Ohio Wesleyan University, Delaware.

Trustees of Research Fund—(For three years). Dr. T. C. MENDENHALL, Ravenna; (For one year, to fill vacancy) Professor M. E. STICKNEY, Denison University, Granville.

Member of Library Committee—Professor W. C. MILLS, Ohio State University, Columbus.

Also, on nomination by the Nominating Committee, the following were elected to represent the Academy on the editorial board of the *Ohio Journal of Science*:

Zoology—Professor R. A. BUDINGTON, Oberlin College, Oberlin.

Botany—Professor M. E. STICKNEY, Denison University, Granville.

Geology—Professor G. D. HUBBARD, Oberlin College, Oberlin.

Physics—Professor S. J. M. ALLEN, University of Cincinnati, Cincinnati.

Anatomy, Physiology, etc.—Professor W. F. MERCER, Ohio University, Athens.

Election of Members

The Membership Committee reported ten names for election to membership; one additional name, previously approved by the Executive Committee and marked with * in the following list, was presented for ratification. All were elected as follows.

Basinger, Almon J., Entomology, Zoology, Botany, Columbiana.

*Gullum, Frank B., Chemistry, Physics, 237 E. Northwood Ave., Columbus.

Herrick, Francis H., Animal Behavior, Life and Instincts of Birds, Western Reserve University, Cleveland.

Lowry, Phil R., Entomology and Zoology, 1597 Hunter Ave., Columbus.

Mitchell, Roger I., Entomology, Sta. E, Route 6, Columbus.

Parks, F. H., Entomology, Botany and Zoology Bldg., Ohio State University, Columbus.

Sampson, Homer C., Botany, Ohio State University, Columbus.

Spohr, Carl F., Medical Dept., Ohio State University, Columbus.

Tucker, W. M., Geology, Dept. of Geology, Ohio State University, Columbus.

Waller, A. E., Botany, Agronomy, Dept. of Botany, Ohio State University, Columbus.

Wickliff, E. L., Zoology, Ornithology, Columbus.

The Report of the Committee on Necrology

The following report was presented by the Committee on Necrology.

ADOLPH FEIEL.

Born in Wurtemberg in June, 1836; died in Columbus, February 22, 1917.

He received a common school education at home and came to the United States when eighteen years old. From 1876 to 1879 he was a student in Starling Medical College, completing the regular course in medicine—then three years—but refused to apply for a degree, stating in his modest way that he did not feel himself worthy of the honor.

He was appointed assistant and later given charge of the course in Histology in Starling Medical College. In 1895 he came to the Ohio State University as instructor in Histology, which position he held until shortly before his death.

He was remarkably proficient in histological technique. His interpretation of a microscopic preparation was exceeded by no one I ever knew. His study and knowledge of the protozoa was extensive.

His induction into science was interesting. A guest at a hotel where Mr. Feiel was then employed left behind a popular book on science. In it was an illustrated description of the human skin. With characteristic conservatism, our friend doubted that so much detail was present in such an apparently simple object. His savings went toward the purchase of a microscope, and then came a realization of the difficulties that beset the investigator. He entered Starling College mainly for the purpose of obtaining section of the human skin and while this was the beginning his scientific spirit led him on and on in the pursuit of knowledge in his chosen field.

He was a man of sterling integrity and of honest ideals. He was joint author of two papers published in the transactions of the American Microscopical Society dealing with "The Trophic Effects upon the Heart after Section of the Vagi."

A. M. BLEILE.

Resolutions

The following resolutions were presented by the Committee on Resolutions and adopted by the Academy.

1. The Academy wishes to express its grateful appreciation of the hospitality of the Ohio State University in connection with its meeting.

2. The Academy wishes again to express to Mr. Emerson McMillin its sense of the great service he is rendering in his generous gifts to the Research Fund, and its gratitude to him for his support of this, the vital part of our work.

M. M. METCALF, *Com.*

The following additional resolution was adopted by the Academy on motion of Professor Walton.

The Ohio Academy of Science places itself on record as deprecating the suppression of the study of the German language in the curricula of some of our colleges.

The study of German should be continued not only by reason of its direct utility to our troops abroad, but also because it is fundamentally necessary to science and productive scholarship.

It is not the language, but Prussian ideas, which are antagonistic to the Allied nations; and any action which prevents the efficient development of scholarship and science, and of the industries dependent upon them, will prove advantageous to our enemies.

Proposed Restriction of Membership of Academy

A proposition was presented to the Academy by Dr. T. C. Mendenhall, looking to a restriction of membership to those engaged in professional and productive scientific work. Thus membership might be "made of greater importance by being made more difficult," and the Ohio Academy might realize more fully the "influence throughout the State that such a body should have." The Academy voted a general approval of the suggestion, together with its reference to a committee to be appointed by the President. This action and the report of the committee (to be included in the preliminary announcement of the next Annual Meeting) are to be interpreted as notice of a proposed amendment of the Constitution. The matter was referred by the President to the Executive Committee.

Miscellaneous Business

Voted that the Treasurer be authorized to pay the bill for binding a file of the Annual Reports, prepared by the Library Committee for the use of the Secretary.

Voted that the Secretary be authorized to draw upon the Treasurer for the payment of clerical assistance, not to exceed fifty dollars per year.

Adjournment

The meeting adjourned without determining the place of the next meeting.

SCIENTIFIC SESSIONS

The complete scientific program of the meeting follows:

Presidential Address

"The Origin of the Cerebral Ganglia of the Vertebrates,"

F. L. LANDACRE

Symposium on Science and the War

The Work of the Ground Schools in the Training of the Air Forces of the United States.....	F. C. BLAKE
Modern Methods of Plant Disease Control.....	W. G. STOVER
Psychological Tests in the Army.....	GEORGE F. ARPS
Methods of Teaching the Theory of Flight in Schools of Aeronautics.....	H. C. LORD
Topography and the War on the Western Front.....	T. M. HILLS
The Newer Demands on Physics and Physics Teachers Due to the War....	E. H. JOHNSON

Papers

1. Notes on Distribution of North Atlantic Bryozoa. 10 min. (Lantern),
RAYMOND C. OSBURN
2. The Economic Value of the Ephemerida. 5 min.....CHAS. P. FOX
3. A Peculiar Habit of the Rusty Grackle. 3 min.....EDWARD L. RICE
4. Remarks on Leaf Hoppers on Hawaiian Islands. 8 min.....HERBERT OSBORN
5. The Fauna of a Series of Rock-bottomed Ponds. 15 min. (Lantern),
F. H. KRECKER
6. The Habits of the Folding-door Spiders. 20 min.....W. M. BARROWS
7. The Subterranean Life of Meadows and Pastures. 10 min. HERBERT OSBORN
8. Opalina and the Origin of the Ciliata. 25 min.....MAYNARD M. METCALF
9. The Bryozoan Gizzard. 3 min.....RAYMOND C. OSBURN
10. Free-swimming Larval Colonies of Pectinatella from Black Channel,
Cedar Point. 8 min.....STEPHEN R. WILLIAMS
11. Anatomy of Echinorhynchus sp. 8 min.
C. F. MCKHANN, JR., introduced by STEPHEN R. WILLIAMS
12. The Effect of Certain Ductless Gland Extracts on Plant Tissues. 10 min.
(Lantern).....R. A. BUDINGTON
13. Our Knowledge of Ohio Crustacea. 5 min.....RAYMOND C. OSBURN
14. A List of Ohio Spiders (now in press). 5 min.....W. M. BARROWS
15. A Preliminary Survey of the Protozoa of Mirror Lake on the Ohio State
University Campus. 6 min.....MABEL E. STEHLE
16. Application of Colloid Chemistry to Nephritis. 15 min. HAZEL C. CAMERON
17. Reaction Time in the Blind and the Deaf. 5 min.....A. M. BLEILE
18. The Effect of Radium Radiations on the Germ Cells of Drosophila
ampelophila. 20 min.....W. M. BARROWS
19. Studies of Vaso-motor Balance. 15 min.
CLYDE BROOKS, CLAYTON MCPEEK and R. J. SEYMOUR
20. Note on the Catalase Content of the Turtle Heart. 4 min.....R. J. SEYMOUR
21. Pneumococcus Types. 5 min.....CARL L. SPOHR
22. The Cancer Problem. 20 min. (Lantern).....ERNEST SCOTT
23. Behavior of the X-chromosomes in Branchipus vernalis. 5 min.
R. C. BAKER
24. Work of the Plant Disease Survey, U. S. D. A. in Ohio. 10 min...A. D. SELBY
25. The Lecidaecae of Ohio. 15 min. (Lantern).....BRUCE FINK
26. Interesting Ascomycetes. 10 min. (Lantern).....BRUCE FINK
27. A Revised Course for Secondary Botany. 15 min.....BLANCHE McAVOY
28. Succession on Prairies. 20 min. (Lantern).....HOMER C. SAMPSON

29. Regeneration Studies of Bryophyllum. 20 min. (Lantern).
CHARLES W. MCINTYRE
30. An Electric Drying Oven for Plant Presses. 5 min. E. LUCY BRAUN
31. Inland Associations of Algæ. 20 min. (Lantern)..... EDGAR N. TRANSEAU
32. The Effect of Hairy Coverings on Transpiration. 10 min. (Lantern).
JASPER D. SAYRE
33. The Indicator Significance of Plant Associations in Crop Distribution
in the United States. 25 min. (Lantern)..... ADOLPH WALLER
34. Vegetative Reproduction of the Pinnatifid Spleenwort. 5 min. (Lantern).
CLARA G. MARK
35. Effect of Seed Treatment for Smut on Germination. 10 min.
WILMER G. STOVER
36. An Apple Root Fungous Disease. 10 min. HARRY W. LUTZ
37. Characteristics of the Eruption of Katmai as Indicated by its Effect
on Vegetation. 15 min. (Lantern)..... ROBERT F. GRIGGS
38. Some Land Forms of Central Southern Ohio. 10 min. LEWIS G. WESTGATE
39. Fossils of the Greenfield (Ohio) Dolomite and Where to Find Them.
15 min. C. W. NAPPER
40. Moulding Sands of Ohio. 10 min. J. A. BOWNOCKER
41. Effects of the Wisconsin Glacier on a Portion of the Whitewater Valley
in Indiana. 15 min. W. M. TUCKER
42. Some Especially Interesting New Species of Richmond Fossils. 8 min.
(Lantern)..... W. H. SHIDELER
43. Effect of Transverse Magnetic Field on Some of the Physical Properties
of Nickel Wire. 10 min. A. A. ATKINSON
44. Title to be announced. T. C. MENDENHALL
45. The Magnetic-Mechanical Analysis of Cast Iron. 10 min.
SAMUEL R. WILLIAMS

Demonstrations

1. Specimens and Photographs from the Valley of Ten Thousand Smokes.
ROBERT F. GRIGGS
2. Specimen of a Dermoid Cyst with Teeth, loaned by Dr. H. Moore,
Oxford. STEPHEN R. WILLIAMS
3. Leaf Hoppers of Hawaiian Islands. HERBERT OSBORN
4. One-eyed Frog (*Acris gryllus*). F. H. KRECKER
5. Laboratory Table Tray. F. H. KRECKER and W. J. KOSTIR
6. Colony Forms in Marine Bryozoa. RAYMOND C. OSBURN
7. Exhibit of Greenfield (Ohio) Dolomite Fossils. C. W. NAPPER
8. Two New Varieties of *Acer rubrum*. FRED A. DETMERS
9. A Collection of Ohio Spiders; a Method of Exhibiting Spiders; Nest of
Folding-door Spider. W. M. BARROWS
10. A Vaso-motor Balance. CLYDE BROOKS, CLAYTON McPEEK, R. J. SEYMOUR
11. Models of Embryonic Skull of *Eumeces*. EDWARD L. RICE
12. Sections of Nasal Capsule and Olfactory Nerves of Embryonic *Eumeces*.
EDWARD L. RICE
13. X-chromosomes of *Branchipus vernalis*. R. C. BAKER
14. Origin of Cartilage from Ectoderm in the Urodeles. F. L. LANDACRE

EDWARD L. RICE, *Secretary*.

1919 MEETING
of the
OHIO ACADEMY OF SCIENCE.

The Ohio Academy of Science will meet in Columbus, at the Ohio State University, on Thursday, Friday and Saturday, May 29, 30 and 31, 1919.

Detailed announcements regarding program, meeting places for the various sections and other local arrangements will be sent out by the Secretary.